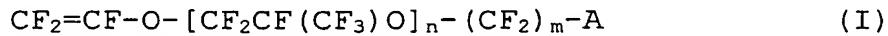


## CLAIMS

1. A method for producing a fluorocopolymer  
 which comprises a polymerization reaction of a  
 5 fluorine-containing ethylenic monomer with at least one  
 fluorovinyl ether derivative represented by the following  
 general formula (I):



(wherein n represents an integer of 0 to 3, m represents an  
 10 integer of 1 to 5, and A represents  $-\text{SO}_2\text{X}$  or  $-\text{COOY}$ ; X represents  
 a halogen atom or  $-\text{NR}^1\text{R}^2$ ;  $\text{R}^1$  and  $\text{R}^2$  are the same or different  
 and each represents a hydrogen atom, an alkali metal, an alkyl  
 group or a sulfonyl-containing group and Y represents a hydrogen  
 atom or an alkyl group having 1 to 4 carbon atoms) to give a  
 15 fluorocopolymer,

said fluorine-containing ethylenic monomer being a  
 perhaloethylenic monomer represented by the following general  
 formula (II):



20 (wherein  $\text{R}_f^1$  represents a fluorine atom, a chlorine atom,  $\text{R}_f^2$   
 or  $\text{OR}_f^2$ ;  $\text{R}_f^2$  represents a straight or branched perfluoroalkyl  
 group having 1 to 9 carbon atoms, which may have an ether oxygen  
 atom(s)) and/or a hydrogen-containing fluoroethylenic monomer  
 represented by the following general formula (III):



25 (wherein  $\text{X}^1$  represents a hydrogen atom or a fluorine atom and  
 $\text{X}^2$  represents a hydrogen atom, a fluorine atom, a chlorine atom,  
 $\text{R}_f^3$  or  $\text{OR}_f^3$ ;  $\text{R}_f^3$  represents a straight or branched perfluoroalkyl  
 group having 1 to 9 carbon atoms, which may have an ether oxygen  
 30 atom(s)) and

said polymerization reaction being carried out in a  
 saturated perfluorohydrocarbon while additional feeding of  
 said fluorine-containing ethylenic monomer and said  
 fluorovinyl ether derivative being carried out.

2. The method for producing a fluorocopolymer according to Claim 1,

wherein the polymerization reaction brings a mass of the fluorocopolymer relative to a volume of a polymerization solution to arrive at 30 g/L or a higher level.

3. The method for producing a fluorocopolymer according to Claim 1 or 2,

wherein the saturated perfluorohydrocarbon has 20 or less than 20 carbon atoms and has a cyclic structure or linear structure each optionally with a branched structure.

4. The method for producing a fluorocopolymer according to Claim 1,

wherein the saturated perfluorohydrocarbon is a perfluorohexane or a perfluorocyclobutane.

5. The method for producing a fluorocopolymer according to Claim 1, 2, 3 or 4,

wherein the fluorine-containing ethylenic monomer is  $\text{CF}_2=\text{CF}_2$ , n is 0 (zero), m is 2 and A is  $-\text{SO}_2\text{F}$ .

6. A fluorocopolymer produced by the method for producing a fluorocopolymer according to Claim 1, 2, 3, 4 or 5.

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7. The fluorocopolymer according to Claim 6 which satisfies the following relations (a) and (b):

$$0 \leq \Delta H \leq 6.375 - 0.475C \quad (5 \leq C \leq 13) \quad (\text{a})$$

$$0 \leq \Delta H \leq 0.2 \quad (13 < C \leq 18) \quad (\text{b})$$

30 where  $\Delta H$  is a heat of fusion (in J/g) as appearing at 315 to 325°C upon measurement with a differential scanning calorimeter and C is a fluorovinyl ether derivative unit content (in mole percent) in the fluorocopolymer.

35 8. A molded article formed from the fluorocopolymer

according to Claim 6 or 7.

9. The molded article according to Claim 8,  
which forms a membrane.

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10. A solid polyelectrolyte fuel cell comprising the  
molded article according to Claim 8 or 9.